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Microprocessor-Based Wind Speed and Direction Monitor

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MICROPROCESSOR-BASED
WIND SPEED AND DIRECTION MONITOR

Final Report

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ABSTRACT

This report is an overview of what has been completed for Senior Design Phase I and II. The project that I proposed is to design and build a microprocessor-based wind speed and direction monitor. There is a need for this device for someone, such as a sailor. The sailor needs to know wind speed and direction to decide if conditions are right to sail and if so, to determine which direction to point the boat when leaving the shore.

Three major sections are discussed. First, the anemometer used as the mechanical hardware. The internal components of the anemometer are analyzed and the necessary modifications are discussed. Following the mechanical hardware is the electrical hardware.

The wind speed signal that is generated by the tachometer must first go through the comparator circuit, to the frequency to voltage converter circuit, to the analog to digital converter, and finally to the microprocessor. While the wind direction only has to go through an analog to digital circuit before going to the microprocessor. The microprocessor, a Hitachi 63P01, has the software, the final section of this report, on the 2764 EPROM which decodes the signal and outputs to a display.